

CALL FOR PAPERS

Trustworthy Data Ecosystems for Digital Societies

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Trustworthy Data Ecosystems for Digital Societies

Call for Papers

Description

There is a growing interest in and need for data of all kinds. Digital societies and their activities can be data driven, data centric, data informed, or data-enabled. Especially as we pursue the adoption of artificial intelligence (AI) and generative AI (GenAI) technologies, data is increasingly relied upon in our digital societies worldwide [1]. Data can be conceptualized as raw facts, observations or patterns that serve as inputs to AI and GenAI systems [2-4].

An AI system is a digital system that requires objectives to process inputs in order to generate outputs in the form of inferences, predictions, new content, recommendations, judgements, or to reach conclusions that can alter the state of the environment (virtual or physical). AI systems in operation vary in autonomy and adaptiveness [5]. AI is not a new concept; its history dates back to the 1950s [6]. What is new, however, is:

- its democratization along with the increased focus on mobility and digitalization of individuals, businesses, and government interactions and services;
- the commoditization of AI research and models;
- connectivity and online access;
- its impact on changing society, lifestyle, and habits;
- the recent widespread hype of GenAI capabilities around content generation and their positive and negative impacts etc.

Data democratization is a mechanism to enable and empower everybody to access and use data for decision-making irrespective of their technical expertise. Such ease of access and use of data lead to the commoditization of AI systems and their integration into our work and life. We can easily connect using Internet and interact with AI systems for work or social purpose. For instance, AI systems can be used as personal digital assistants by individuals and groups (e.g., citizens or employees) for processing data, generating reports, scheduling tasks, making decisions and responding to questions or queries. Our society seems to rely on AI systems' ability to augment certain human capabilities such as speech, vision, problem solving and decision making [7]. While AI systems seem to offer new opportunities of scaling human capabilities, however, it is essential to understand the AI systems' components, properties and pressing concerns, such as transparency and trustworthiness of data, algorithms, and models. Users must use these systems responsibly and ethically for legitimate tasks for fair gain though fair means. This responsible and ethical use concerns two actors - the system itself (trustworthiness and transparency of systems and algorithms surrounding them) [19-21, 23-25], and the user, i.e., the manner, in which the system is used. Through the interaction

with the AI system, users might inadvertently or deliberately provide biased data, which in turn trains the AI system. This can lead to the AI learning and perpetuating unethical behavior [4].

Although, there is an increasing interest and hype around AI and GenAI adoption for efficiency gains and scalability [7], there is a pressing need for addressing data challenges that support these technologies. These challenges include data source authenticity, governance, content or source attribution, transparency, copyrights, observability, misinformation, disinformation, privacy, security, poisoning, bias, etc. within federated and complex data ecosystem environments [1, 8-9,11-12, 18, 22]. A data ecosystem stands for a complex adaptive, federated, and open system of data systems represented by “a network of actors, both human and technology, that source and process data for mutual benefits using different data systems” [10].

In today's data-driven world and democratization, AI became an integral part of these ecosystems. AI functions not only as a mere component, but also as an actor and stakeholder [14-15]. As such it is crucial to investigate trustworthy data ecosystem concepts, definitions, policies, strategies, architectures, interfaces, methodologies, orchestration, patterns, solutions, technologies. Additionally, examining use cases and their impact on digital societies is essential. In the absence of established definitions, it is imperative to define them clearly. Particular attention should be given to the dynamism and evolution of these data ecosystems over time with the specific interest in their resilience and sustainability [13- 17]. This calls for establishing and studying the trustworthiness of various types [10, 15] across various domains (e.g., aged care, banking, democracy, education, finance, government, health, transport) of digital societies.

The research and innovation in trustworthy data ecosystems for digital societies requires a transdisciplinary approach. Therefore, this special issue calls invites papers from various disciplines such as computer science, data science, decision science, information science, information systems, management, and social science. These can be conceptual, design science, empirical, other original work, industry, government, and theoretical papers.

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Important dates

- Submissions open: **15 August 2024**
- Submissions close: **30 June 2025**
- Author latest notifications of acceptance: **15 August 2025**
- Subsequent review rounds: **Sep-Dec 2025**
- Final receipt of final files: **01 Jan 2026**
- Publication of special issue (tentative): **01 Mar 2026**

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Topics

Key topics surround intersection of data ecosystem and AI topics, i.e., AI in and for trustworthy data ecosystems, and include, but are not limited to:

- Conceptualization of trustworthy data ecosystems domains and characteristics for digital societies
- Data trust regulations, policies, strategies and standards
- Trustworthy data ecosystem infrastructure as a social construct
- Trustworthy data ecosystem architecture, interfaces, methodologies, orchestration, patterns, solutions, and technology platforms
- System and data quality, governance, security, privacy, protection, and safety
- Data linking, interoperability, sharing and observability
- Impact of trustworthy data ecosystem on digital societies at the local, national and global levels

How to Submit

- For article formats, templates, and submission information, see <https://technologyandsociety.org/transactions/tts-author-information/>.
- Submit your papers through <https://iee.atyponrex.com/dashboard/?journalCode=TTS>

Review and publication process

Papers will be reviewed on a rolling basis. Papers accepted for full review will be reviewed by anonymous reviewers with a target turnaround of 8 weeks for a first review decision. To be considered for the special issue, revisions of papers that are accepted with changes need to be submitted before the listed dates. Should they require further cycles of revision, they will be included in a future regular issue of the Transactions, pending a decision by the Editor-in-Chief.

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